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IMAGING IN INTENSIVE CARE MEDICINE



Resuscitated unconscious male: Lichtenberg's sign lighting the way

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An intubated unconscious 18-year-old male was admitted to the trauma center with a fern-leaf erythematous pattern on his right chest and flank, a second-degree upper chest burn, and a deep full-thickness occipital scalp burn (Fig. 1a). Earlier in the day his military unit had completed marching and drill exercises in torrential rain. At night in wet tents, his squad suddenly awoke to find him unconscious and in cardiac arrest. After 25 min of cardiopulmonary resuscitation he regained sinus rhythm, but with inadequate breathing had an oxygen saturation of only 52%. Lichtenberg's figures (keraunographic markings) with their dendritic, arborescent or fern-like branching erythematous skin pattern are

pathognomonic for lightning injury (Fig. 1b). Georg Lichtenberg first coined the term in 1777 whilst experimenting with static electricity. The markings' pathogenesis is unclear, but may result from subcutaneous blood extravasation, appearing within an hour of injury and rapidly fading within a couple of days, much like a wheal and flare (or dermographic) reaction. Lack of histopathological changes on biopsy contradicts Lichtenberg figures being a physical phenomenon. The patient was discharged after 2 weeks and long-term follow-up revealed mild cognitive impairment. The rest of his squad sustained only minor burn injuries and neuropsychological symptoms.

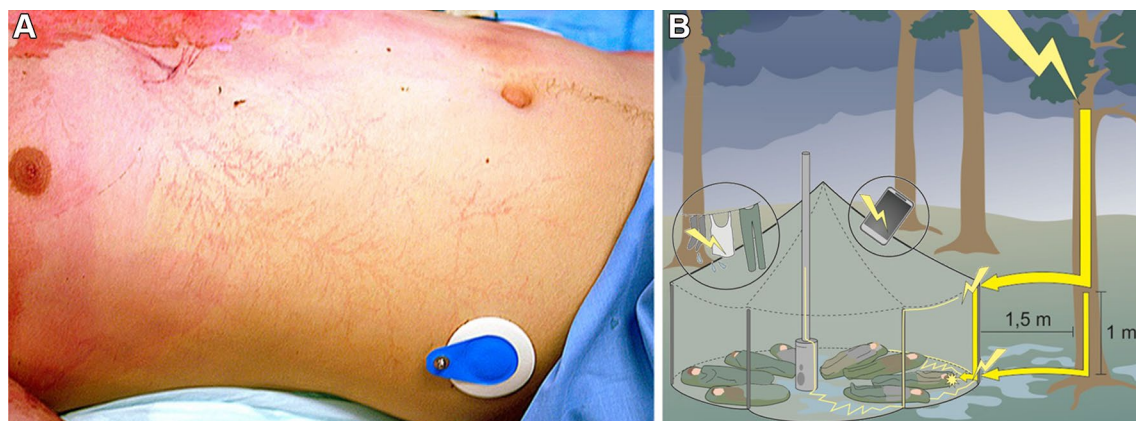


Fig. 1 **a** Presentation with an erythematous fern-like pattern over the right anterolateral chest and a second-degree upper chest burn. **b** Possible mechanisms of the lightning injury: side flash from current splashing from a nearby tree (most likely mechanism), ground current/stride potential passing via the central tent pole along the wet floor onto the victim(s) or indirectly via a mobile phone close to the patient's head

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Author contributions

All authors have made substantial contributions to the conception and design, acquisition of data, drafting the article, and final approval of this version.

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